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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,744	10/22/2001	Dirk Quintens	27500-10	8435
7590	07/07/2004		EXAMINER	
Joseph T. Guy Ph.D. Nexsen Pruet Jacobs & Pollard LLP 201 W. McBee Avenue Greenville, SC 29603			TSOY, ELENA	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,744	QUINTENS ET AL.	
	Examiner	Art Unit	
	Elena Tsoy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 June 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9,11 and 12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2004 has been entered.

Response to Amendment

2. Amendment filed on June 16, 2004 has been entered. Claim 10 has been cancelled. Claims 1-9, 11, 12 are pending in the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi (US 6,485,812) in view of JP63101463.

Sekiguchi discloses a method for the preparation of an ink jet recording sheet comprising coating on at least one side of a support at least one ink-receiving layer (layers (a) and (b)) comprising fine inorganic particles (inorganic pigments) (See Abstract) such as silica (See column 8, lines 36, 49-50; column 9, lines 28-33) at a solid weight % of 50 to 99.9 of the total

solid weight of the layer (See column 12, lines 31-35) and a binder resin (See Abstract; column 5, lines 13-16), characterized in that a plurality of layers (layers (a) and (b)) are simultaneously coated in a wet-on-wet fashion (See column 17, lines 44-45). The binder resin is any known natural and synthetic resin binder without any particular restriction (See column 12, lines 13-16), including (water-soluble) hydroxyethyl (ether) cellulose (See column 11, lines 60-65), or preferably binder resins containing amino groups (See column 12, lines 16-20).

Sekiguchi fails to teach that the static surface tension of a top layer (b) is lower than the static surface tension of a layer (a) (Claim 1).

JP63101463 teaches that in wet-on-wet coating process, when the surface tension of the base paint is higher than that of the upper coat paint e.g. clear paint, the upper coat paint expands to make thin film over the base coat film surface (i.e. good wetting) and shows good leveling property even if the clear coat film is thin (See Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formulated a composition for a top layer (b) in Sekiguchi so that a surface tension of the top layer (b) composition is lower than a surface tension of the surface of a layer (a) with the expectation of providing the desired wetting and good leveling property since JP63101463 teaches that in wet-on-wet coating process, when the surface tension of the base paint is higher than that of the upper coat paint e.g. clear paint, the upper coat paint expands to make thin film over the base coat film surface (i.e. good wetting) and shows good leveling property even if the clear coat film is thin.

5. **Claims 4-6, 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi (US 6,485,812) in view of JP63101463, further in view of Cousin et al (US 4,554,181).

Sekiguchi in view of JP63101463, as applied above, fails to teach that the water-soluble polymer is a cationic polymer (Claim 4) such as nitrogen containing cationic polymer (Claim 5), e.g. poly(diallyldimethylammonium chloride) (Claim 6) or polyamine (Claim 9).

Cousin et al teach that coatings comprising nitrogen containing cationic polymers such as poly(diallyldimethylammonium chloride) or polyamine (See column 5, lines 19-21) on a recording sheet provide non-offsetting images good and water fastness since the cationic polymers insolubilize anionic dyes (See column 2, lines 34-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used nitrogen containing cationic polymers such as poly(diallyldimethylammonium chloride) or polyamine as water-soluble polymer in a method of Sekiguchi in view of JP63101463 with the expectation of providing the desired non-offsetting images good and water fastness, as taught by Cousin et al.

6. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi (US 6,485,812) in view of JP63101463, further in view of Cousin et al (US 4,554,181), and further in view of Rabasco (US 6,455,134).

Sekiguchi in view of JP63101463 in view of Cousin et al, as applied above, fails to teach that the cationic nitrogen containing polymer is copoly(vinylalcohol-vinylacetate-diallyldimethylammonium chloride).

Rabasco teaches that coatings comprising cationic nitrogen containing polymers such as a copolymer of vinylacetate, diallyldimethylammonium chloride and vinylalcohol (See column 4, lines 9-13, 24-25, 41-42, 47, 52, 57-63) provide an ink recording paper with improved functions such as good water and light fastness (See column 1, lines 6-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a copolymer of vinylacetate, diallyldimethylammonium chloride and vinylalcohol as a cationic nitrogen containing polymer in a method of Sekiguchi in view of JP63101463 in view of Cousin et al for the preparation of an ink jet recording sheet with the expectation of providing the ink jet recording sheet with the desired improved functions such as good water and light fastness, as taught by Rabasco.

7. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi (US 6,485,812) in view of JP63101463 in view of Cousin et al (US 4,554,181), and further in view of Malhotra et al (US 5,693,410).

Sekiguchi in view of JP63101463 in view of Cousin et al, as applied above, fails to teach that the cationic nitrogen containing polymer is cellulose 2-hydroxyethylether polymer with N,N-dimethyl, N-2 propenyl-2 propene-1-ammoniumchloride.

Malhotra et al teach that coatings comprising cationic nitrogen containing polymers such as diethylammonium chloride hydroxyethyl (ether) cellulose (See column 23, lines 22-26) provide the ink receiving transparencies and papers with many advantages such as excellent water fast and lightfast images (See column 1, lines 6-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used diethylammonium chloride hydroxyethyl (ether) cellulose as a cationic nitrogen containing polymer in a method of Sekiguchi in view of JP63101463 in view of Cousin et al for the preparation of an ink jet recording sheet with the expectation of providing the ink jet recording sheet with the desired advantages such as water fast and lightfast images, as taught by Malhotra et al.

It is held that compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also In re May, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (stereoisomers *prima facie* obvious).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used any isomer of hydroxyethyl (ether) cellulose including 2-hydroxyethyl (ether) cellulose and homologue of diethylammonium chloride including dimethylammonium chloride in a method of Sekiguchi in view of JP63101463 in view of Cousin et al, further in view of Malhotra et al for the preparation of an ink jet recording sheet with the expectation of providing the ink jet recording sheet with the desired advantages such as water fast and lightfast images, since it is held that compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties.

8. **Claims 11, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi (US 6,485,812) in view of JP63101463, further in view of Van den Zegel (US 5,693,370).

Sekiguchi in view of JP63101463, as applied above, fails to teach that the layers are coated simultaneously wet on wet using a slide-hopper coating technique (Claim 11) or a curtain coating technique (Claim 12).

Van den Zegel teaches that a slide-hopper coating technique or a slide-hopper curtain coating technique can be used for applying hydrophilic layers simultaneously in wet on wet fashion.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used slide-hopper coating technique or by the slide-hopper curtain coating technique for applying simultaneously wet on wet a plurality of layers in a method of Sekiguchi in view of JP63101463 since Van den Zegel teaches that slide-hopper coating technique or slide-hopper curtain coating technique can be used for applying hydrophilic layers simultaneously in wet on wet fashion.

Response to Arguments

9. Applicants' arguments filed June 16, 2004 have been fully considered but they are not persuasive.

(A) Applicants argue that Sekiguchi does not disclose simultaneous coating of different ink receiving layers in a wet-on-wet fashion. Cousin et al also do not disclose simultaneous coating of different ink receiving layers in a wet-on-wet fashion.

First of all, claim 1 does not recite that ink receiving layers are different from each other. Claim 1 merely recites that the layer (a) **contains** a pigment and the layer (b) **contains** a water-soluble polymer, and the layers are coated simultaneously wet-on-wet. Secondly, Sekiguchi does

disclose simultaneous coating of ink receiving layers in a wet-on-wet fashion (See column 17, lines 44-45).

Cousin et al is a secondary reference which is relied upon to show that water-soluble nitrogen containing cationic polymers such as poly(diallyldimethylammonium chloride) or polyamine can be used in compositions for coating a recording sheet to provide non-offsetting images good and water fastness since the cationic polymers insolubilize anionic dyes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used nitrogen containing cationic polymers such as the water-soluble polymer of Sekiguchi with the expectation of providing the desired good non-offsetting images and water fastness, as taught by Cousin et al.

One of ordinary skill in the art at would have reasonable expectation of success in using cationic polymers of Cousin et al as a binder resin for simultaneous wet-on-wet coating in Sekiguchi since Sekiguchi teaches that the binder resin is *any* known natural and synthetic resin binder without any particular restriction (See column 12, lines 13-16), including binder resins containing amino groups.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (571) 272-1429. The examiner can normally be reached on Mo-Thur. 9:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elena Tsoy
Primary Examiner
Art Unit 1762

July 1, 2004